1927

Willys Knight

Model 66-A

Operation and Care

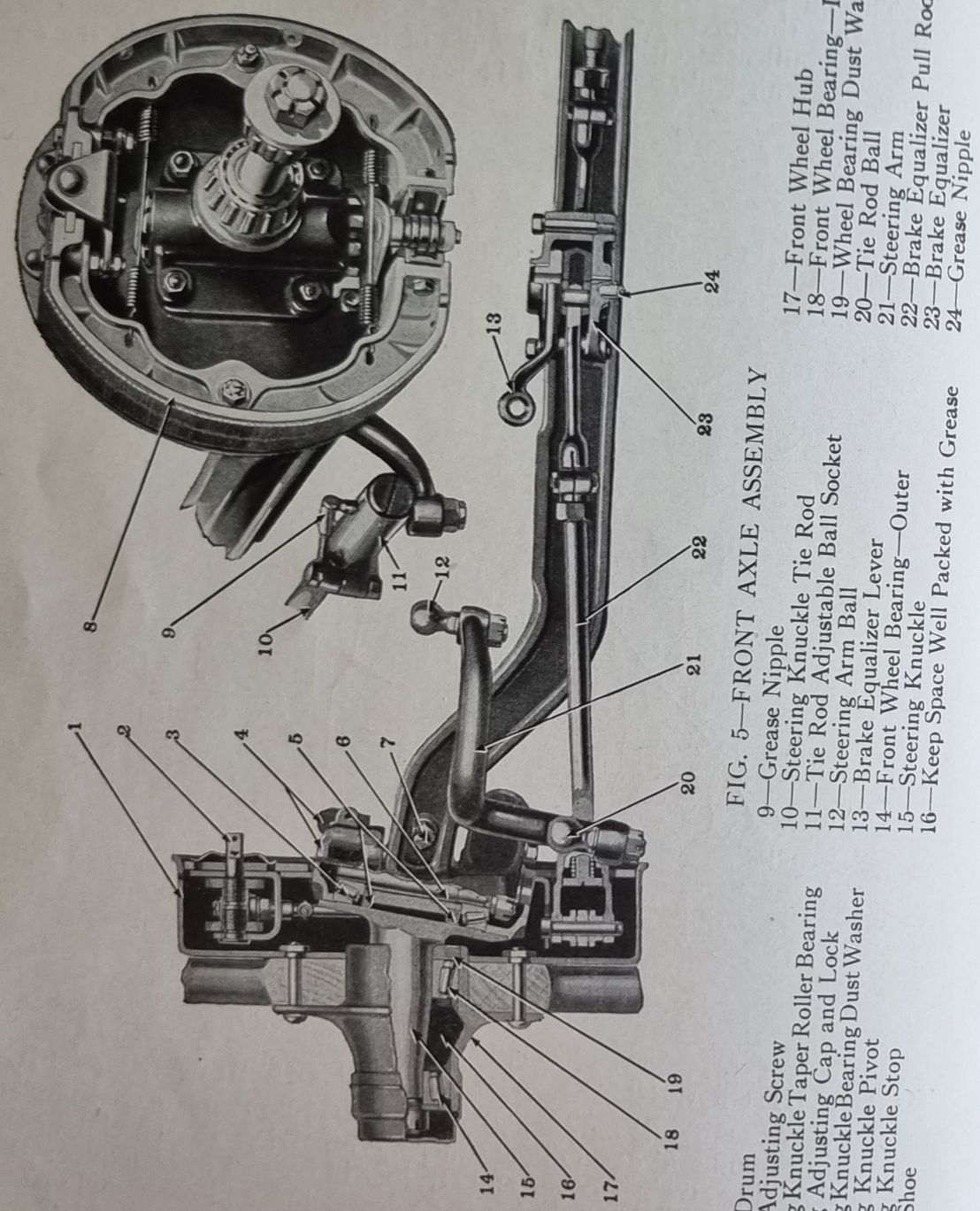


FIG. 5—FRONT AXLE ASSEMBLY

1—Brake Drum
2—Brake Adjusting Screw
3—Steering Knuckle Taper Roller Bearing
4—Bearing Adjusting Cap and Lock
5—Steering Knuckle Bearing Dust Washer
6—Steering Knuckle Pivot
7—Steering Knuckle Stop
8—Brake Shoe
9—Grease Nipple
10—Steering Knuckle Tie Rod
11—Tie Rod Adjustable Ball Socket
12—Steering Arm Ball
13—Brake Equalizer Lever
14—Front Wheel Bearing—Outer
15—Steering Knuckle
16—Keep Space Well Packed with Grease
17—Front Wheel Hub
18—Front Wheel Bearing—Inner
19—Wheel Bearing Dust Washer
20—Tie Rod Ball
21—Steering Arm
22—Brake Equalizer Pull Rod
23—Brake Equalizer
24—Grease Nipple

OIL RECTIFIER. FIG. 4.

The Rectifier is automatic in operation, being actuated by intake vacuum. No attention is required except a semi-annual adjustment of the Heater Valve and a periodic cleaning at 10,000 mile intervals.

Vacuum is applied to the Rectifier through Tube "6", connecting with the carburetor throat. A horizontal bus bar, "5", along the block, permits removal of excess oil and dilution from between the two lower piston rings as well as from the sleeves just below the intake port. The mixture of oil and fuel is then collected from each cylinder and conducted to the Rectifier, entering at point "3". Here the unburned gasoline is distilled off by the exhaust heat. The vapors pass out through Tube "6" and are carried via the intake manifold to the cylinders where they are used for fuel.

The rectified oil returns to the crankcase through Tube "4", the flow being controlled by a float mechanism similar in principle to that used in the vacuum tank. The temperature of the oil is regulated by the Thermostatic Valve "2" which eliminates any possibility of overheating.

The Heater Valve "1", governs the amount of exhaust shunted around the Rectifier. It is shown in the full open position—the correct setting for winter operation in cold localities. In a mild climate it will seldom be necessary to give the valve its maximum opening to keep down dilution.

For summer driving, it is imperative that this valve be closed by lowering the lever arm to the horizontal position.

Should any part of the Rectifier mechanism fail it will be evidenced by excessive smoking from the exhaust tube of the muffler. Under these conditions the Rectifier should be examined by an authorized dealer. *Local repairs should not be attempted.* It is improbable, however, that any trouble with the Rectifier will be experienced providing it receives a regular cleaning as recommended.

CHASSIS LUBRICATION

All oilers, indicated by "1" in Fig. 10, should be gone over with the compressor, which is furnished with the tool kit, once every week, or 250 miles. Hook the bayonet coupling at the end of the compressor to the nipple of the oiler. This is best done by placing the coupling over the nipple with the steel projector opposite the coupling slot, and by a slight pressure forward and a turn to the right an absolutely tight joint is made. Turn handle to right until grease is forced through the bearing. Before disconnecting coupling turn handle back to relieve pressure so that the grease will not flow from the coupling when disconnected. Should you be unable to force grease to the bearing surface, it may be that the oil ducts have become clogged and caked with old grease and no amount of pressure will dislodge it. In such cases it is advisable to take the bearing apart and clean it.

Use a semi-fluid steam cylinder oil, such as is recommended for the transmission and differential or a soft light grease. The importance of using a good lubricant cannot be exaggerated as the cost will be more

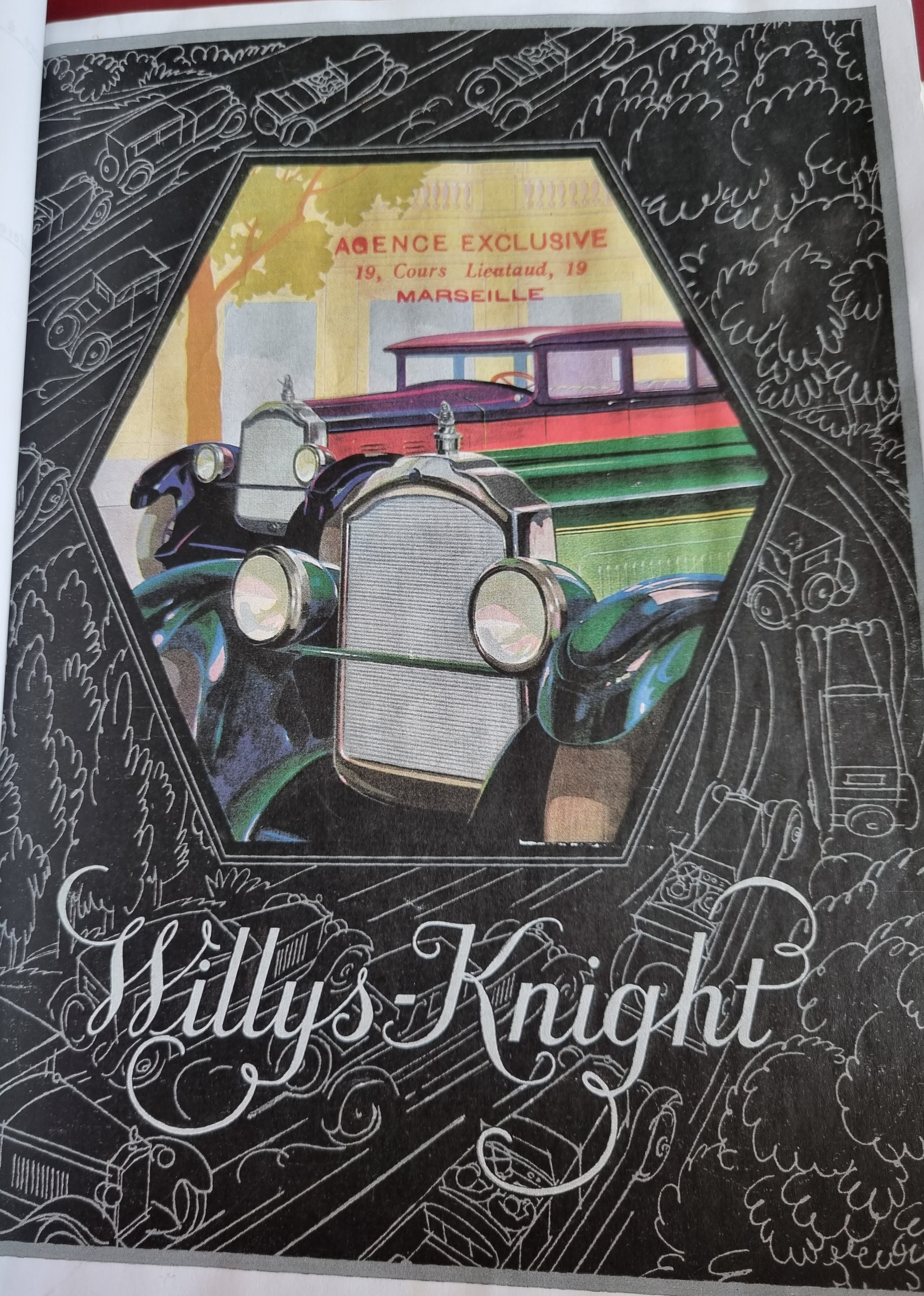
Willys Knight

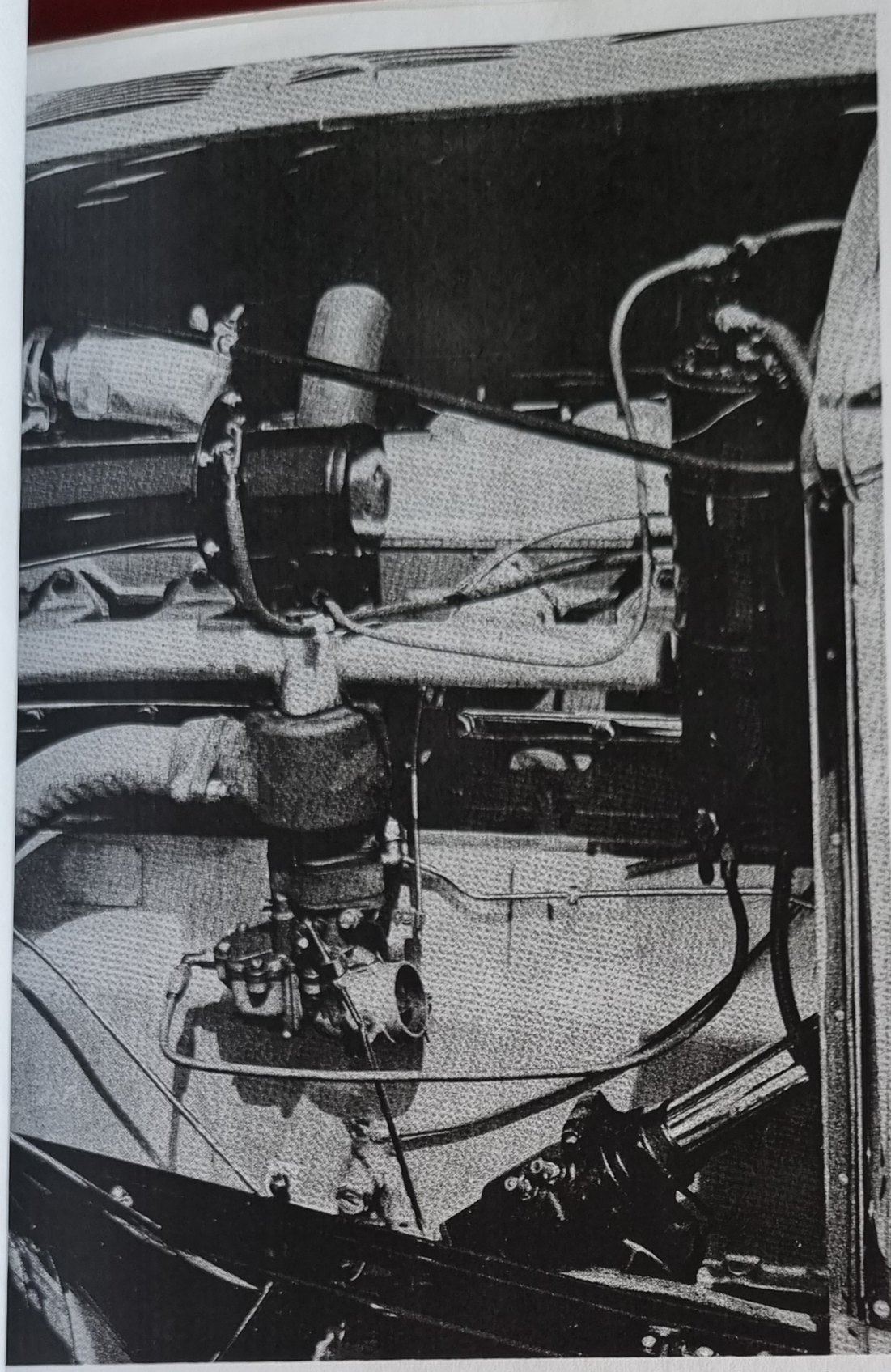
66A

1928

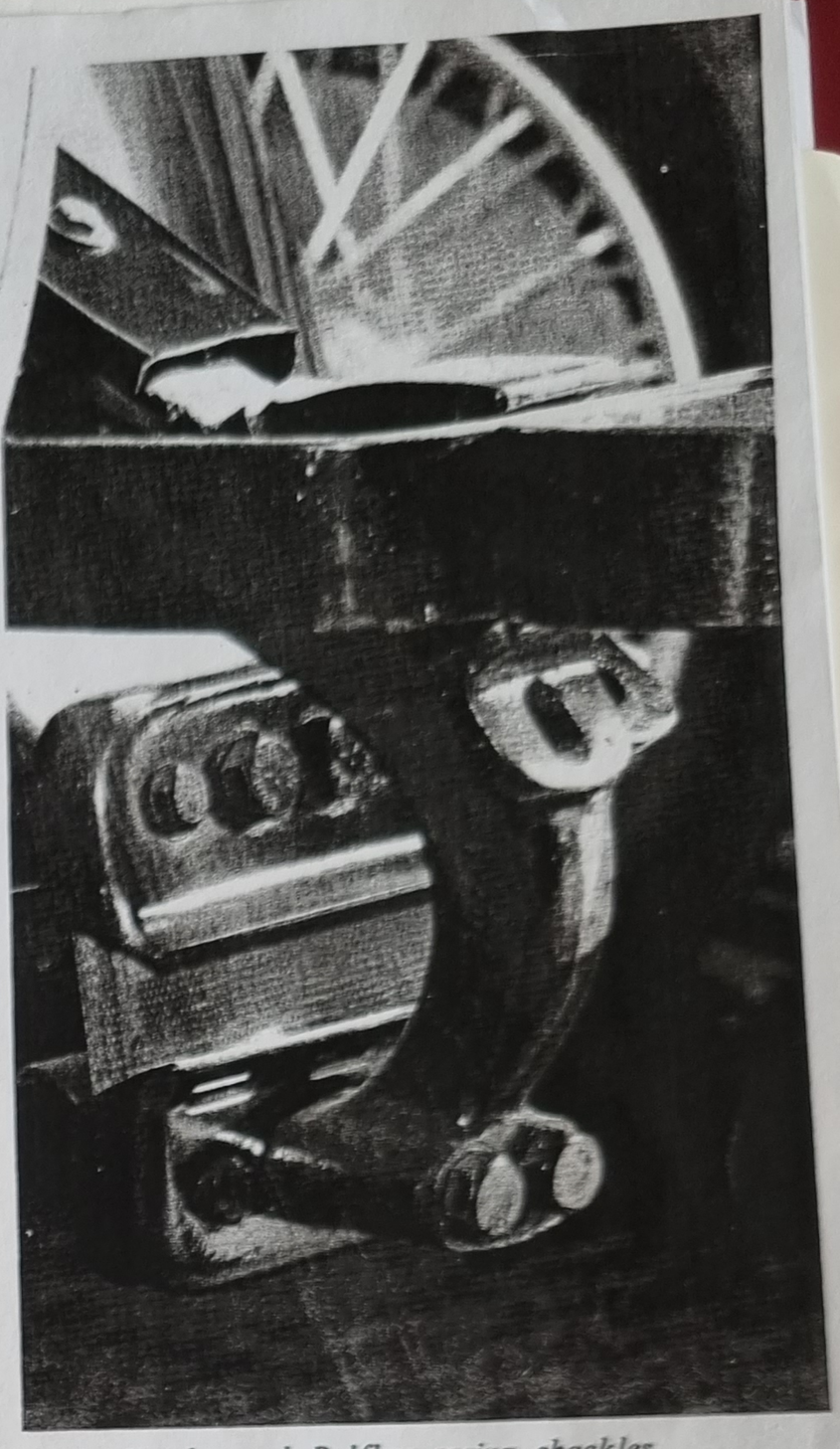
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AGENCE EXCLUSIVE
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MARSEILLE
Silly's-Knight



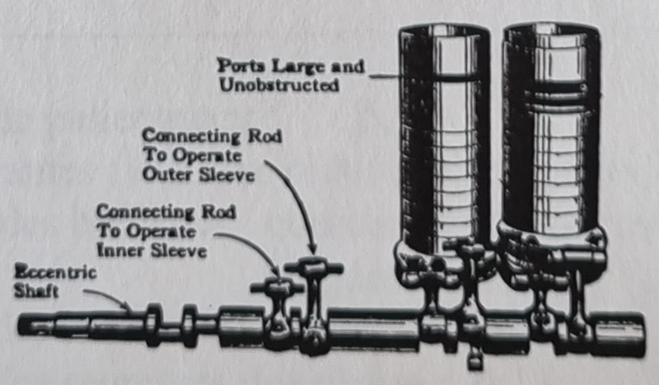
ve carb contains Skinner rectifier, and pipe over head brings exhaust from other side Sleeve-valve engines boasted greater silence, more power per cid than poppeteers.



Willys-Knight used Belflex spring shackles, which had 2 layers of thick, rubber-impregnated belting and no metal-to-metal contact. As a result: no road rumble, never any squeaks, no lube problems, smooth ride, and long life.

THE KNIGHT SLEEVER WORKS

linder has its own cylinder head, ton, two concentric sleeves, and onnecting rods. The conventional connects the piston to the crank- d two short rods attach the up-and- oving sleeves to an eccentric shaft half crank speed (same as a cam). ing is straight through, the fuel mix- nitted and exhausted through half- e slits on either side of the sleeves. s controlled by the location of these port is open when the slits in both egister with each other and with the intake or exhaust manifold. Open, there's no obstruction lve stem or head—and manifolding can be designed so it's straight in and straight out. individual cylinder head has a hemispherical combustion chamber, with the spark plug set above piston center. This gives swirl, squish, and even flame-front travel, allowing Knight to operate at an average of one point higher compression than contemporary poppet engines. ad fits into the inner sleeve, and sealing is by one wide "junk" ring and one oil-control ring. Knight was only one type of sleeve-valve engine. There were many others developed over s. The primary reason Knight engines finally lost out to poppeteers was their higher cost facture.



THE RACING KNIGHT

Knight sleeve-valve engines aren't thought of today as the stuff race cars are made of. But for a time they did race themselves proud. Below is a partial list of triumphs.

1909—Mercedes-Knight wins Nicholas Tour in Russia.

1910—Mercedes-Knight takes first at SPA week.

1911—Minerva-Knight wins Winter Cup in Swedish Winter Trials; again in 1913 and 1914.

1913—Mercedes-Knight takes 5th at Indianapolis—no stops, no problems.

1914—Minerva-Knight wins TT Race on Isle of Man; also takes 2-3-5 in Tourist Trophy and does well in Austrian Alpine Trials.

1922—Four 6-cyl. Voisins finish 1-2-3-5 at Strasbourg French Grand Prix, the winning car averaging 67 mph.

1924—Peugeot-Knight wins Touring-Car Grands Prix.

1925—Panhard-Knight establishes World Hour Record of 115.3 mph. Peugeot-Knight takes 2-3 in Targa Florio.

1927—Peugeot-Knight captures Touring Grand Prix.

1928—Voisin 8 sets 15 world speed records, including 24-hour endurance at 113.5 mph.

1928—Minerva-Knight wins team prize in International Alpine Trials.